

***Begonia fusca* (Begoniaceae), a new naturalized species for Hawai'i**

SCOTT E. MILLER³ (Department of Systematic Biology, National Museum of Natural History, Smithsonian Institution, Washington DC 20560–0105, USA; email:miller.scott@nmnh.si.edu) & GEORGE W. STAPLES (Hawaii Biological Survey, Department of Natural Sciences, Bishop Museum, 1525 Bernice St., Honolulu, Hawai'i 96817–2704, USA)

Field collecting and herbarium research has brought to light another naturalized species of *Begonia* new to the Hawaiian Islands. Cultivated in the islands since at least the 1930s, *Begonia fusca* Liebm. has now been found naturalized on Kaua'i and O'ahu and further survey work may locate populations on other islands as well.

In a recent survey paper of cultivated plants that are or could become invasive in the Hawaiian Islands, four *Begonia* species were included (Staples *et al.*, 2000). The tiny, dust-fine seeds of many begonias are primarily dispersed by wind and secondarily by rain-wash (Lange & Bouman, 1999), making begonias likely candidates for escape from gardens into surrounding natural environments. Collectors are encouraged to look for begonias growing outside of cultivation so that we may better assess the presence, distribution, and abundance of these non-indigenous species throughout the Islands.

***Begonia fusca* Liebm.**

New naturalized record

Native to southern Mexico and adjacent Guatemala (Burt-Utley, 1985), *B. fusca* is a robust species with flowering scapes that attain one meter in height, standing taller than the leaves. Plants have a fleshy rhizome up to 20 cm tall and 3 cm thick that produces leaves with petioles 25–40 cm tall, obliquely cordate blades 15–30 cm long and 7.5–23 cm wide, deep dull green above, paler on the underside, the margins scalloped to shallowly lobed. Inflorescences are leafless, taller than the foliage, and bear forked clusters of white to pale pinkish flowers about 1.3 cm in diameter, with 2 tepals that are hairy outside. The male flowers have \pm circular tepals and a mass of stamens in the center; female flowers have a hairy ovary with 3 unequal, ciliate wings.

Collector's notes indicate that the Kalihi Valley population consisted of three plants, growing intermixed with *Begonia semperflorens-cultorum*; no conspecifics were known to be in the vicinity. These plants persisted at the site through at least 2000, when monitoring ceased⁴. It is worth noting that the oldest specimen in BISH (Judd *et al. s.n.*, in 1932), was collected on Kapālama Heights, atop the ridge just above and to the east of Kalihi Valley, which suggests that *B. fusca* has been cultivated in this part of O'ahu for at least 70 years.

All Hawaiian specimens in BISH, cultivated and naturalized, are cited below to guide collectors in searching for further evidence of naturalized populations. The last-cited specimen is a mixture of flowers from *B. fusca* and a leaf from what may be *B. urophylla* Hook.

Material examined. **KAUA'I:** Hanalei Distr., along edge of road near Maniniholo Cave, just W of cave entrance, where it appears to be naturalized, 25 Feb 1986, *T. Flynn & M. Bergau* 1558 (BISH, PTBG); Kōloa Distr., Kalāheo, cultivated in garden of Kukuiohono Golf Course. 16 Feb 1990, *L. Hume & T. Flynn* 478 (BISH, PTBG). **O'AHU:** Honolulu Distr., Kalihi Valley, 3060 Papali Street, volunteer on steep rocky slope dominated by ferns and *Passiflora*, elev. 150 m, 21 Feb 1996, *S. Miller*

3. Research Associate, Hawaii Biological Survey, Department of Natural Sciences, Bishop Museum, 1525 Bernice Street, Honolulu, Hawai'i 96817-2704, USA.

4. Plants are still persisting at this locality as of April 2003 — Editors.

11 (BISH); Kapālama Heights, Kamehameha Girls School, 6 Jun 1932, *A. F. Judd, E. H. Bryan Jr., & M. Neal s.n.* (BISH 42874); Ko'olau Loa Distr., Sunset Beach, common ornamental or pot flower, elev. 5 m, 25 Mar 1975, *D. Afuulo s.n.* (BISH 580134).

Acknowledgments

Jan Doorenbos (WAG) identified numerous voucher specimens of cultivated *Begonia* from BISH, which provided an excellent reference base for ongoing identification of new specimens received by Herbarium Pacificum.

Literature Cited

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New plant records from the Hawaiian Archipelago

FOREST STARR, KIM STARR, & LLOYD L. LOOPE (United States Geological Survey, Biological Resources Division, P.O. Box 369, Makawao, Hawai'i 96768, USA; email: fstarr@hawaii.edu).

The following contributions include new island records, new state records, and range extensions of plants located on Kure Atoll, Midway Atoll, Maui, and Hawai'i. Voucher specimens are housed in the Bishop Museum's *Herbarium Pacificum*, Honolulu.

Agavaceae

Sansevieria trifasciata Prain

New island record

Previously known to be naturalized on O'ahu where several extensive roadside populations were found (Imada *et al.*, 2000), *S. trifasciata* (mother-in-law's tongue) is now also known to be naturalized on Maui where it is similarly distributed.

Material examined: MAUI: E. Maui, Ho'okipa, roadside populations on coast, 5 ft [2 m], 15 Sep. 2000, *Starr & Martz 000915-2*.

Aizoaceae

Tetragonia tetragonioides (Pall.) Kuntze

Range extension

Previously known from coastal sites on Midway Atoll, Nihoa, Kaua'i, O'ahu, West Maui, and Hawai'i (Wagner *et al.* 1990; Oppenheimer *et al.*, 1999; Starr & Martz, 2000), *T. tetragonioides* (New Zealand spinach) is now also known from East Maui where it can be found from sea level to 3500 ft [1065 m], especially in Paia and Kula.

Material examined: MAUI: E. Maui, Kula, on roadcut near Rice Park, 3000 ft [915 m], 21 Aug 2001, *Starr & Martz 010821-1*; E. Maui, Kula, telephone sub-station near Kekaulike Ave, 3050 ft [930 m], 21 Aug 2001, *Starr & Martz 010821-2*; E. Maui, Kula, side of Kolohala Rd, 3500 ft [1065 m], 21 Aug 2001, *Starr & Martz 010821-3*; E. Maui, Paia Bay, in sand near parking lot, 9 Jan 2002, 10 ft [3 m], *Starr & Martz 020109-2*.